

Workplace exposure - Measurement of airborne microorganisms and microbial compounds - General requirements (corrected version 2019-10)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 13098:2019 sisaldab Euroopa standardi EN 13098:2019 ingliskeelset teksti.	This Estonian standard EVS-EN 13098:2019 consists of the English text of the European standard EN 13098:2019.
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English Version

Workplace exposure - Measurement of airborne microorganisms and microbial compounds - General requirements

Exposition sur les lieux de travail - Mesurage de microorganismes et en suspension dans l'air - Exigences générales

Exposition am Arbeitsplatz - Messung von luftgetragenen Mikroorganismen und mikrobiellen Bestandteilen - Allgemeine Anforderungen

This European Standard was approved by CEN on 10 June 2019.

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European foreword

This document (EN 13098:2019) has been prepared by Technical Committee CEN/TC 137 “Assessment of workplace exposure to chemical and biological agents”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2020, and conflicting national standards shall be withdrawn at the latest by March 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13098:2000.

The major technical changes between this European Standard and the previous edition are as follows:

- a) document title changed;
- b) list of measurable bioaerosol compounds extended;
- c) new measuring techniques added;
- d) new definitions for “allergen”, “cell count of microorganisms”, “glucan”, “microbial compound”, “mycotoxin”, and “RfC-recombinant” added;
- e) existing definitions technically revised, where necessary;
- f) terms and definitions already referred to in EN 1540 deleted;
- g) 5.3 on “Measurement strategy” improved by providing more details;
- h) Annex A updated with regard to new techniques and methods;
- i) Annex B updated with new compounds that can be measured;
- j) Annex C updated with regard to new counting strategies and identification methods;
- k) new Annex E on “Formula and calculation examples for colony counting” added;
- l) Bibliography updated and divided in informative references and other information resources;
- m) whole document editorially and technically revised.

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Introduction

Representative assessment of occupational exposure to airborne microbial organisms or compounds is challenging. However, because of potential health consequences following exposure, it is important to be able to evaluate and control exposure. The sampling equipment used can introduce its own critical limitations, such as the assessment of the health-related aerosol fractions. Some sampling equipment is capable only of measuring culturable microorganisms, while others allow the characterization of both, the total number of microbial cells and the culturable fraction. Both preservation of samples and analytical procedures can induce difficulties and uncertainties due to changes of microbial population and/or unwanted interferences. However, by adhering to the principles outlined in this European Standard for choice of sampling and analytical procedures, these uncertainties can be reduced and controlled, allowing comparable and representative measurements to be made.

1 Scope

This document specifies general requirements for the measurement of microorganisms and microbial compounds.

This document provides also guidelines for the assessment of workplace exposure to airborne microorganisms including the determination of total number and culturable number of microorganisms and microbial compounds in the workplace atmosphere.

This document does not apply to the measurement of viruses.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 482, *Workplace exposure — General requirements for the performance of procedures for the measurement of chemical agents*

EN 1540, *Workplace exposure — Terminology*

EN ISO 13137, *Workplace atmospheres — Pumps for personal sampling of chemical and biological agents — Requirements and test methods (ISO 13137)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1540 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

actinomycetes

filamentous Gram-positive, aerobic or anaerobic bacteria belonging to the phylum *Actinobacteria*

Note 1 to entry: Filamentous actinomycetes form a branching network of thin filaments called a mycelium. Most actinomycetes replicate by conidia-like spores which can easily be made airborne.

3.2

allergen

substance that can cause an allergic reaction in sensitized person

Note 1 to entry: Allergens from microbiological origin are usually proteins or glycoproteins derived from fungi or bacteria.